

**2023 -2024 ARTICULATION AGREEMENT**  
**between**  
**Triangle Tech and Central Westmoreland Career and Technology Center**

In order to provide secondary school students with a continuum of education without unnecessary duplication of instruction or delay in attaining educational/career objectives, **Triangle Tech** and **Central Westmoreland Career and Technology Center** have entered into this articulation agreement. Credits will be granted on the basis of the courses listed below:

Central Westmoreland Career and Technology Center			Triangle Tech			
Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician CIP 47.0201			Refrigeration, Heating, Ventilation, and Air Conditioning Technology			
Course Number	Course Name	Hours	Semester	Course Number	Course Name	Semester Credits
<b>600</b>	<b>Basic Electricity</b>		1 <sup>st</sup>	RH111	Essentials of Electricity	2
	<b>601</b> Describe methods of producing electricity using appropriate terms.	17				
	<b>601.01</b> Define Electrical Power, lead open circuit, protect device, and resistance in a series circuit	5				
	<b>601.02</b> Explain difference between Alternating Current (AC) and Direct Current (DC), define load device, switch and wire three loads	7				
	<b>602</b> Calculate basic electrical quantities using Ohm's Law.	9				
	<b>602.01</b> Evaluate condition of a step-up and step-down transformer	3				
	<b>602.02</b> Define capacitance, impedance, induction, resistive, and wire series-parallel circuit	6				
	<b>602.03</b> Use Ammeter, analog meter, clamp-on ammeter, digital meter, multimeter, ohmmeter and voltmeter	15				
	<b>603</b> Explain how magnetism is used in different HVAC components.	9				
	<b>603.01</b> Define Electromagnet, induced voltage, induction, isolation transformer, primary coil, secondary coil, step-transformer	13				
	<b>604</b> Identify Safe Electrical Practices.	6				
	<b>606</b> Demonstrate proper wiring techniques.	8				
	<b>606.01</b> Wire two loads in a series using a switch to turn them off and on, keeping a third light on	2				
	<b>606.02</b> Wire a current relay into a motor circuit	2				
	<b>606.03</b> Wire a solid-state starting relay into a motor circuit	2				
	<b>606.04</b> Wire an external overload into a motor circuit	2				
	<b>606.05</b> Wire a potential starting relay into a motor circuit	2				
	<b>607</b> Demonstrate electrical testing to include mechanical/electrical relays	2				
	<b>607.01</b> Check the resistance of a series circuit with an ohmmeter	1				
	<b>608</b> Wire series circuit, parallel circuit, and series/parallel circuit.	2				
	<b>608.01</b> Wire a series-parallel circuit with six light bulbs-three wired in a parallel and three wired in a series	3				
	<b>608.02</b> Measure a series circuit's voltage	2				
	<b>608.03</b> Measure a parallel circuit's voltage	1				
	<b>609</b> Install electric disconnects, circuit breakers and fuses.	5				

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610 Identify and test capacitors.	1				
611 Identify electrical motors and their applications.	1				
611.01 Identify and install and test a PTC device into a PSC motor	1				
611.02 Check a relay contactor and contactor coil used to start an electric motor	4				
611.03 Define Centrifugal Motor Switch, hematic split-phase motors, hot wire, motor overload and protector	5				
611.04 Define capacitor-start capacitor-run (CSCR) motor, permanent-split capacitor (PSC) motor, potential starting relay	5				
612 Identify motor control protection and start devices.	2				
612.01 Define External Overload, internal overload, line-breaking, thermostatic, and three-phase motor	4				
612.12 Wire a heating/cooling thermostat	13				
613 Recognize Electrical Codes.	6				
614 Demonstrate knowledge of transformers and their applications.	4				
<b>Total Related Class Hours</b>		<b>170</b>			
<b>400 Blueprint Reading</b>			3 <sup>rd</sup>	RH234	Blueprint Reading
401 Identify types of blueprint plans	5				1
402 Read and interpret blueprint plans	5				
<b>600 Basic Electricity</b>					
605 Identify and draw various types of electrical schematics and symbols.	1				
605.01 Define and draw Close on-drop, close on-rise, cut-in, cut-out, differential low event, dual-pressure switch, high-event	6				
605.02 Check the switching action of a low-pressure switch and draw the electrical symbol that would represent a pressure switch	6				
605.03 Define and then draw symbols for: Bleed Resister, capacitor, CS motor, CSC motor, MFuF, PSC	9				
<b>Total Related Class Hours</b>		<b>32</b>			
<b>Total Hours</b>		<b>202</b>			<b>Total Semester Credits</b>
					<b>3.0</b>

Before course credit(s) can be awarded, the following conditions must be fulfilled:

1. Student must meet standard admission criteria of Triangle Tech.
2. Applicant must notify the Admissions Department at Triangle Tech of his/her intention to apply for the grant of credit under this agreement.
3. Application for the grant of credit must be made within one year after coursework at the secondary institution has been completed.
4. Applicants, who desire credit for the above-mentioned courses at Triangle Tech, must have earned a "B" or higher average in the related Central Westmoreland Career and Technology Center courses. Central Westmoreland Career and Technology Center must provide a final transcript of grades, which lists the applicant's earned final grade for each above-mentioned course referenced in this agreement for credit-transfer.
5. In lieu of a letter grade, the applicant will receive a "CR" grade on their Triangle Tech transcript designating that the applicant has received credit for the above-mentioned courses.

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6. Upon completion of the application requirements, credit(s) may be granted on a course by course basis and the student will be granted \$497.00 per credit per course toward their tuition at Triangle Tech. (If credit per course price increases, credit per course granted will increase to match.)
7. Applicant should be aware that courses for which credits are granted may have an impact on the overall financial aid resources available to the student, if the total semester credits actually taken after credits are granted fall below 12 credits per semester.

**CLASSROOM PRESENTATIONS**

As part of this agreement, Central Westmoreland Career and Technology Center administrators will permit Triangle Tech representatives to conduct classroom presentations to RHVAC classes at Central Westmoreland Career and Technology Center, each year, to promote RHVAC careers and this articulation agreement.

**DURATION OF REVIEW**

This agreement will take effect upon the affixing of signatures by each of the parties named below.

This Memorandum of Agreement shall be effective from the date of affixing signatures and shall be renewed annually one year from the date of origination. It remains subject to such revisions as are mutually agreeable at the time of annual review, but the duration of the agreement shall be considered continuous. Either party may terminate the agreement at the time of annual review provided the party has given written notice 90 days in advance of intent to do so.

In testimony thereof, witness the duly authorized signatures of the parties hereto:

(1) \_\_\_\_\_  
Authorized Signature - Triangle Tech

Date: \_\_\_\_\_

Print Name: Timothy J. McMahon

Title: President

(1)  \_\_\_\_\_  
Authorized Signature – Central Westmoreland Career and Technology Center

Date: 09-13-2023

Print Name: Jason B. Lucia

Title: Administrative Director